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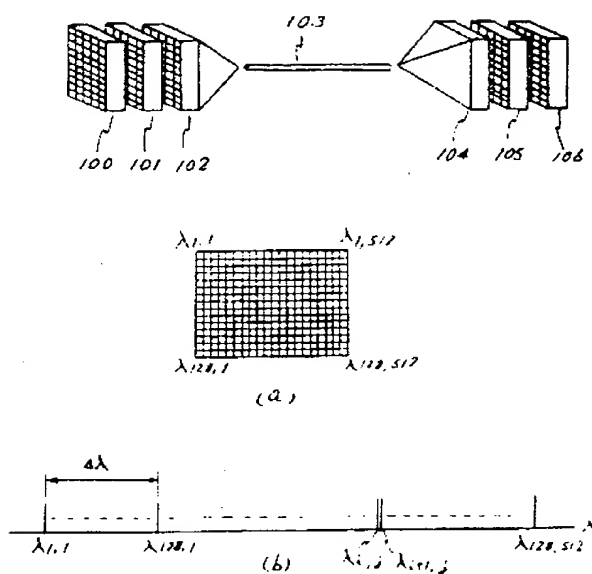
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TITLE : COMMUNICATION SYSTEM FOR TWO-DIMENSIONAL INFORMATION



ABSTRACT : PURPOSE: To transmit two-dimensional information with a small power consumption by modulating the rays of light having different wavelengths by means of the information of each picture element constituting the two-dimensional information and transmitting the modulated lights through an optical waveguide as wavelength-multiplexed optical signals.

CONSTITUTION: A photodiode array 100 is composed of 512x512 photodiodes arranged in a plane corresponding to the picture elements of two-dimensional picture information and converts two-dimensional picture information into electric signals. The array 100 resolves the information into four sheets of picture information at every 4th line and obtains electric signals of 512x128. The electric signals are optically modulated by 512x128 pieces of laser diodes which are arranged in a plane on a heterodyne modulator array 101 and have wavelengths $\lambda_{1,1}$ ~ $\lambda_{128,512}$ and sent to an optical fiber 103 after they are multiplexed and combined by a light insertion multiplexing circuit 102. The transmitted signals are demultiplexed by an optical demultiplexing and branching circuit 104 and detected by a heterodyne detector array 105 and then, displayed by means of a light emitting element array 106.

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